

**Claims Listing**

This listing of claims will replace all prior versions, and listings, of claims in the application.

1. (previously presented) A method for detecting the presence of a target nucleic acid sequence in a sample, said method comprising:

(a) amplifying said target nucleic acid and introducing a purine rich region into the target sequence during the amplification reaction so that the product of the amplification reaction includes a purine rich region;

(b) during step (a), contacting the sample with a peptide nucleic acid able to bind at least a portion of said target sequence; and

(c) detecting the presence of triplex structures,  
wherein the detection of the presence of triplex structures indicates the presence of target nucleic acid sequences in the sample.

2. (original) A method according to claim 1 wherein the peptide nucleic acid is bis-PNA.

3-4. (canceled)

5. (original) A method according to claim 1 wherein the amplification reaction is a polymerase chain reaction.

6. (previously presented) A method for detecting the presence of a target nucleic acid sequence that contains a purine rich region in a sample, said method comprising:

(a) amplifying said target nucleic acid so that the product of the amplification reaction includes the purine rich region;

(b) during step (a), contacting the sample with a peptide nucleic acid able to bind at least a portion of said target sequence; and

(c) detecting the presence of triplex structures,  
wherein the detection of the presence of triplex structures indicates the presence of target nucleic acid sequences in the sample.

7. (canceled)

8. (previously presented) A method according to claim 1 wherein primers used in the amplification comprise a plurality of pyrimidines at the 5' end thereof.

9. (original) A method according to claim 1 wherein the peptide nucleic acid is immobilized on a support.

10. (original) A method according to claim 9 wherein the support is a waveguide of a detection device.

11. (original) A method according to claim 10 wherein the detection device is a surface plasmon resonance detector.

12. (original) A method according to claim 1 wherein the triplex structure is detected by a gel retardation method.

13. (canceled)

14. (previously presented) A kit for carrying out a method according to claim 1, said kit comprising a peptide nucleic acid sequence, which is specific for a target nucleotide sequence, immobilized on a waveguide of an evanescent wave detector apparatus.

15. (canceled)

16. (previously presented) A kit according to claim 14 wherein the evanescent wave detector apparatus is a surface plasmon resonance detector.

17. (canceled)
18. (previously presented) A method for detecting the presence of a target nucleic acid sequence in a sample, comprising
  - (a) amplifying the target nucleic acid so that the product of the amplification reaction includes a purine rich region;
  - (b) contacting the sample with a wave guide of an evanescent wave guide detector on which is immobilized a peptide nucleic acid able to bind at least a portion of the target sequence; and
  - (c) detecting the presence of triplex structures on the wave guide using the detector.
19. (previously presented) The method of claim 18 wherein the evanescent wave guide detector is a surface plasmon resonance detector.
20. (previously presented) The method of claim 18 wherein the amplification product is exposed to the peptide nucleic acid during or after the amplification reaction.
21. (previously presented) The method of claim 20 wherein the amplification product is exposed to the peptide nucleic acid after completion of the amplification reaction.
22. (previously presented) The method of claim 6 wherein the amplification reaction is a polymerase chain reaction.
23. (previously presented) The method of claim 6 wherein the peptide nucleic acid is immobilized on a support.
24. (previously presented) The method of claim 6 wherein the triplex structure is detected by a gel retardation method.